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REVIEW OF V. D. GOLOPEROV'S BOOK "REPAIRING THE ELECTRICAL EQUIPMENT OF COMBAT AND AUXILIARY MACHINES"

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The electrical equipment of modern combat, auxiliary, and transport vehicles is vital to their operation. Its repair constitutes a substantial proportion of the total repair of these vehicles.

In literature on repairing the equipment of self-propelled vehicles, very little attention is paid to the problem of repairing electrical equipment. Therefore, the appearance of a special book on repairing the electrical equipment of combat and auxiliary vehicles is most timely.

V. D. Goloperov's book contains seven chapters which describe possible troubles and damage to electrical equipment and devices necessary for repairing the electrical equipment of these machines, using the facilities afforded by mobile and small stationary repair shops.

Chapter I examines defects and repair of lead storage batteries. The techniques of repairing and testing these batteries is described correctly, and the recommended devices and equipment actually accelerate battery repair. Unfortunately, in the appendix to this chapter devoted to charging and testing repaired batteries, no mention is made of charging by using dry-disk rectifiers and a coil magnetized by dc. This is much simpler and better than a motor-generator set and the arrangement can be assembled by a repair workshop. The appendix on the preparation of battery plates can be considered superfluous, as this work is difficult to carry out under workshop conditions and requirements can always be met by our industry.

Chapter II describes the damage and defects most frequently encountered in dc generators, starters, and electric motors. It explains repair and testing techniques and describes the necessary equipment and devices. The repair procedure is correct, and the auxiliary devices described are of practical value. The cross sections and circuits of starters and generators and the reference tables at the end of the chapter are very useful.

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The method of testing windings for short-circuited coils by measuring their resistance, recommended by the author on page 106 and on page 335, is far from ideal, as is well known, but the author makes no mention of this. Testing on an induction apparatus is undoubtedly better, but the author refers to this as though it were an alternative method.

Chapter III describes the most common damage and defects of regulating relays and the repair procedure. The stand for testing generators and relays described at the end of the chapter is very useful for repair shops. The main technical data and relay circuits given are needed in repair work.

Chapter IV examines the repair of ignition apparatus (distributors, magnetoes, coils, and spark plugs). Here again, possible defects and repair techniques are given and the auxiliary equipment necessary for repair and testing is described. There are reference tables on ignition equipment at the end of the chapter. It should be remarked that a makeshift method for the repair of coils and magneto transformers is not satisfactory; the quality of the repair is poor and the apparatus soon goes out of order. The recommendation (page 272) to fill coils impregnated with a paraffin and rosin mixture with transformer oil cannot be considered correct.

In Chapter V, devoted to the repair of measuring and control instruments, the author correctly observes that often this valuable equipment is not repaired and instruments capable of being repaired are junked. Unfortunately, Goloperov does not discuss the repair of bimetallic instruments, which are widely used on modern machines. The repair of thermometers, oil-pressure gauges, speedometers, etc., is not described.

Chapter VI describes the repair of auxiliary electrical equipment (headlamps, signals, etc.) and the dashboard circuit. Wiring diagrams for the electrical equipment of USSR and some foreign makes of motor vehicles are given at the end of the chapter.

Chapter VII gives brief data on electrical engineering and magnetic materials. Unfortunately, there are many gross errors in this chapter. This is evidently due to the fact that the author is not a specialist in the field of electrical and magnetic materials and his sources on this problem were not up to date and sufficiently complete.

Thus, on pages 364-365 he says that PE wire differs from PEL wire by the absence of a lacquer coating on top of the enamel coating. /PEL wire is enameled copper wire./ Further on, he confuses the braiding of wires with their covering (page 365). The description of AOL, AOLB, and ASOB wires is inaccurate. The following sentence appears on page 375: "Micafolium or micalenta is paper with a layer of mica on each side secured by lacquer." This definition is far from the truth. The Bakelite S referred to on page 378 is not adhesive and is not used either in lacquers (it is insoluble) or in plastics. Lacquer No 458 (page 380) is not oil-resistant. The same applies to Lacquer No 462.

Thus, while it gives a fairly comprehensive treatment of the repair of electrical equipment, the book is not free from faults. If these are removed, the book could be a useful practical guide for technical and repair personnel in the armed forces workshops of the Soviet Army and in repair shops of Machine-Tractor Stations and Sovkhozes.

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